

Could You Pass the 1885 Admission Test for High School?

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EXAMINATION FOR ADMISSION.

Jersey City High School, JUNE, 1885

Algebra

I. Define Algebra, an algebraic expression, a polynomial.
Make a literal trinomial.

II. Write a homogeneous quadrinomial of the third degree.
Express the cube root of $10ax$ in two ways.

III. Find the sum and difference of $3x - 4ay + 7cd - 4xy + 16$, and $10ay - 3x - 8xy + 7cd - 13$.

IV. Express the following in its simplest form by removing the parentheses and combining: $1 - (1 - a) + (1 - a + a^2) - (1 - a + a^2 - a^3)$.

V. Find the product of $3 + 4x + 5x^2 - 6x^3$ and $4 - 5x - 6x^2$.

VI. Expand each of the following expressions and give the theorem for each: $\{a+4\}^2$, $\{a^2-10\}^2$, $\{a+4\} \{a-4\}$.

VII. Divide $6a^4 + 4a^3x - 9a^2x^2 - 3ax^3 + 2x^4$ by $2a^2 + 2ax - x^2$.

VIII. Find the prime factors of $x^4 - b^4$ and $x^3 - 1$.

IX. Find the G.C.D. of $6a^2 + 11ax + 3x^2$, and $6a^2 + 7ax - 3x^2$.

X. Divide $(x^2 - 2xy + y^2)/ab$ by $(x - y)/bc$ and give the answer in its lowest terms.

ARITHMETIC

I. If a 60 days note of \$840 is discounted at a bank at $4\frac{1}{2}\%$ what are the proceeds?

II. Find the sum of $\{\text{square root of}\} 16.7281$ and $\{\text{square root of}\} .72\frac{1}{4}$.

III. The interest of \$50 from March 1st to July 1st is \$2.50.
What is the rate?

IV. What is the cost of 19 cwt. 83 lb. of sugar at \$98.50 a ton?
What is discount? A number?

V. Divide the difference between 37 hundredths and 95 thousandths by 25 hundred thousands and express the result in words.

VI. The mason work on a building can be finished by 16 men in 24 days, working 10 hours a day.

How long will it take 22 men working 8 hours a day?

VII. A merchant sold a quantity of goods for \$18,775.

He deducts 5% for cash and then finds that he has made 10%.

What did he pay for the goods?

IX. By selling goods at 12 1/2% profit a man clears \$800.

What was the cost of the goods, and for what were they sold?

X. A merchant offered some goods for \$1170.90 cash, or \$1206 payable in 30 days.

Which was the better offer for the customer, money being worth 10%?

GEOGRAPHY

I. What is the axis of the earth?

What is the equator?

What is the distance from the equator to either pole in degrees, in miles?

Why is it warmer at the equator than near the poles?

II. Name four principal ranges of mountains in Asia, three in Europe, and three in Africa.

III. Name the capitals of the following countries:

Portugal, Greece, Egypt, Persia, Japan, China, Canada, Hindostan, Thibet, Cuba.

IV. Name the states on the west bank of the Mississippi, and the capital of each.

V. Bound New Jersey, and name six important cities in the state.

VI. Tell the situation of the following:

Detroit, Chicago, Portland, Rio Janeiro, Callao, Venice, Bombay, St. Louis, Halifax, Vera Cruz.

VII. Name 10 countries of South America, and the capital of each.

VIII. Bound Russia and name its capital and largest river.

IX. In what countries is coffee raised?

What are the principal exports of France?

Of the West Indies?

X. New York is nearly 75 {degrees} west of London.

When it is noon at the former, what time is it at the latter?

GRAMMAR

I. Analyse the following:

Perseus ground his teeth with rage, for he saw that he had fallen into a trap.

II. Make a list of all the verbs in the sentence above, and give the principal parts of each of them.

III. Parse *for*, *had fallen*, *that*, *saw*

IV. Give two uses of the hyphen.

V. Copy the sentence below, and punctuate it properly.

"Will you please to tell me boys, for what the reindeer is useful"?

VI. Write a sentence containing a noun used as an attribute, a verb in the perfect tense potential mood, and a proper adjective.

VII. Correct

{a} It is only me.

{b} Who did she invite?

{c} Whenever my husband or son take an umbrella down town, they always leave it.

VIII. Write the declension of

{a} bird,

{b} man,

{c} fly,

{d} fox,

{e} it

IX. Write four lines of poetry, giving particular attention to the use of capitals, and to punctuation.

X. Make three sentences, using the plural of sheep

{1} in the nominative case,

{2} in the possessive,

{3} in the objective.

XI. Write a declarative sentence; change to an imperative, to an interrogative, to an exclamatory, and punctuate.

U.S. HISTORY

I. What people settled Massachusetts?

Where did they land, and what was their character?

II. Name four Spanish explorers and state what induced them to come to America.

III. What event do you connect with 1565, 1607, 1620, 1664, 1775?

IV. Name the thirteen colonies that declared their independence in 1776.

V. Name three events of 1777. Which was the most important and why?

VI. What caused the war of 1812?

Who was president during that war?

What was the result of it?

VII. What form of government was established in 1789?

Into what three branches was the government divided?

What do the Senate and House of Representatives constitute?

VIII. What caused the Mexican war?

What was the result?

What American general commanded at the capture of the City of Mexico?

IX. What was the remote and the immediate cause of the great Civil war.

Who captured Fort Donelson?

X. Name three commanders of the Army of the Potomac.

In what battle was "Stonewall" Jackson killed?

How?